TECHNISCHE UNIVERSITÄT WIEN

INSTITUT FÜR ANGEWANDTE PHYSIK
Institute of Applied Physics
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Institut für Allgemeine Physik

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IAP-SEMINAR

ANNOUNCEMENT - SPECIAL SEMINAR

Date: **Friday, 10.3.2017**
Time: **14:00 s.t.**
Location: **Technische Universität Wien, Institut für Angewandte Physik, E134**
yellow tower „B“, 5th floor, Sem.R. DB gelb 05 B (room number DB05L03), 1040 Wien, Wiedner Hauptstraße 8-10

Lecturer: **MSc Montse López**
Materials Science and Physical Chemistry Department, University of Barcelona, Spain
Institute for Bioengineering of Catalonia (IBEC)

Subject: **Characterization of electron transport in azurin at the single molecule level**

Abstract: Electron Transfer (ET) plays essential roles in crucial biological processes such as cell respiration and photosynthesis. It takes place between redox proteins and in protein complexes that display an outstanding efficiency and environmental adaptability. Although the fundamental aspects of ET processes are well understood, more experimental methods are needed to determine electronic pathways in these redox protein structures. Understanding how ET works is important not only for fundamental reasons, but also for the potential technological applications of these redox-active nanoscale systems.
Electrochemical Scanning Tunneling Microscopy (ECSTM) is an excellent tool to study electronic materials and redox molecules including proteins. It offers atomic or single molecule resolution and allows working in aqueous solution, in nearly physiological conditions in the case of proteins, and under full electrochemical control. In my talk, I will discuss our group's efforts in characterizing with ECSTM and its different modes of operation the electron transfer process involving the redox protein azurin at the single molecule level. Azurin is a redox metalloprotein with a copper center that can be immobilized on single crystal Au(111) surfaces via a dithiol covalent bond, representing a model system to study biological ET processes. The characterization of conduction pathways in redox proteins at the nanoscale would enable important advances in biochemistry and would cause a high impact in the field of nanotechnology.

All interested colleagues are welcome to this seminar lecture
(45 minutes presentation followed by discussion).

U. Diebold, S. Mertens e.h.
(Seminar-Chairpersons)

F. Aumayr e.h.
(LVA-Leiter)